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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/544,231

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Toshiyuki Fujine

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EXAMINER

MA, CALVIN

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

07/22/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/544,231	Applicant(s) FUJINE, TOSHIYUKI	
	Examiner CALVIN C. MA	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizutome et al. (US Patent 6124842).

As to claim 6, Mizutome discloses a liquid crystal display displaying (i.e. the ferro-electric liquid crystal display apparatus) (see Fig. 2), using a liquid crystal display panel (i.e. display panel), an image responsive to input image data (i.e. the image data from the host CPU) (see Fig. 2, Col. 4, Lines 7-28), comprising:

a driving device (i.e. the driver unit the separately drive the pixel from two directions) that drives the liquid crystal display panel in either an impulse drive mode or a hold drive mode (i.e. in a bi-stable display such as ferro-electric type display the display has a impulse and hold mode for the two stable mode of display), (i) the impulse drive mode having an image display period for performing display of the input image data and a monochrome display period for performing display of certain previously-specified monochrome display data, each of the display periods being performed within an input image data rewriting period, the input image data written sequentially in each of

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scan lines of the liquid crystal display panel and written in each pixel of the liquid crystal display panel (i.e. the normal operation period when the binary gradation data (ON/OFF) written into the pixel) (see Fig 1, Col. 5, Lines 20-48), (ii) the hold drive mode performing display of the input image data for the entire rewriting period, without setting the monochrome display period (i.e. the blanking period when image data is not outputted) (see Fig. 8, Col. 6, Lines 50-63);

switching device that switches between the modes for driving the liquid crystal display panel by the driving means (i.e. the GCPU control the arbitrary timing of the entire display system) (see Fig. 6-7, Col. 6, Lines 30-47); and

a voltage varying device that varies, in accordance with the input image data and according to one of the modes for driving the liquid crystal display panel, a gradation voltage to-be-applied to the liquid crystal display panel, so as to prevent changes in gamma characteristics due to differences in response speed of liquid crystal between display gradations, which differences are caused by insertion of the monochrome display data (i.e. the pixel multiplexer 14 executes to convert the gradation data according to different input mode under the control of the GCPU which applied the signal in terms of variation of voltage, in this away allowing the gradation level to adjust be properly applied to the register where the pixel data is applied to the multiplexer without causing problems) (see Fig. 4-5, Col. 5 Line 40 - Col. 6 Line 10).

As to claim 2, Mizutome teaches the liquid crystal display of claim 6, wherein the voltage varying device varies a reference gradation voltage for driving the liquid

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crystal display panel (i.e. since in a ferroelectric display panel the gradation voltage result from a two-dimensional area based, area gradation created by the GCPU according to different type of drive mode result in the variation of the reference gradation voltage which is the actual output gradation pattern on the display) (see Fig. 2, Col. 2, Lines 25-43).

As to claim 3, Mizutome teaches liquid crystal display of claim 2, further comprising:
a storage section storing sets of reference gradation voltage data previously specified (i.e. the response to various display mode is stored in the computer RAM, controlled by GCPU 6) (see Fig. 2, Col. 5, Lines 1-37).

As to claim 5, Mizutome teaches the liquid crystal display of any one of claims 6, 2, or 3, wherein the switching switches between the modes for driving the liquid crystal display panel in accordance with a user's instruction.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizutome in view of Iisaka (US Patent 7084861).

As to claim 4, Kawabe does not explicitly teach the temperature detection system, however Iisaka discloses the means for detecting a temperature in the LCD (i.e. the temperature sensor output) (see Iisaka, Fig. 1); and means for varying a gradation voltage to be applied to the liquid crystal display panel, in accordance with the input image data and the detected temperature in the display (i.e. the gradation data is varied according to the ambient temperature) (see Iisaka, Fig. 1, Col. 9, Lines 24-50)

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the temperature based gradation adjustment system of Iisaka in the overall LCD panel design of Mizutome in order to improve the overall LCD picture quality since temperature sensitivity is a fundamental characteristic of liquid crystal molecule and the ability to monitor this factor can be appreciated by one of ordinary skill in the art of electronic display (see Iisaka, Col. 9, Lines 3-50).

Response to Arguments

5. Applicant's arguments filed 04/16/2009 have been fully considered but they are not persuasive.

The applicant's argues in pages 2-5 of the remark regarding to claims 2-6 that Mizutome does not disclose "impulse drive mode", "hold drive mode" and switching

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between the two modes. The examiner disagree with the applicants assertion because the driving scheme of Mizutome is created to allow by the bi-stability of ferroelectric liquid crystal display to be implemented which means that the memory affect utilized between electric impulse becomes a hold drive mode and the normal application of the electrical charge to alter the display state is the impulse mode. As the LCD driving is continuous and line by line process the system naturally alters between the two modes in the bistable environment created by the functional nature of ferroelectric liquid crystal display. Therefore, the application of the monochromatic data on each pixel from the output lines enacts the function of switching modes between storage and writing of new information. Since each pixels are controlled by a specific color output in its impulse mode writing phase.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CALVIN C. MA whose telephone number is (571)270-1713. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on 571-272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Calvin Ma
July 2, 2009

/Chanh Nguyen/
Supervisory Patent Examiner, Art
Unit 2629